

PATY, L.

"Ultrahigh vacuum" by E.A.Trendelerburg. Reviewed by L.Paty.
Chekhosl fiz zhurnal 15 no.4:301-303 '65.

1. Chair of Electronics and Vacuum Physics of the Faculty of
Mathematics and Physics of Charles University, Prague 2, Ke
Karlovu 5. Submitted October 1, 1964.

AUTHOR: Patý, Libor

CZECH/37-59-3-12/29

TITLE: Methods of Measuring and Producing Ultra-high Vacuum. II.

PERIODICAL: Československý časopis pro fysiku, 1959, Nr 3, pp 280-294

ABSTRACT: Review paper on the present state of ultra-high vacuum physics. Recently published new arrangements of a hot cathode ionization manometer, the design of a McLeod manometer for measuring pressures up to 1×10^{-8} mm Hg and a cold cathode manometer, for measuring pressures of the order of 10^{-14} mm Hg, are discussed. Furthermore, published information is reviewed on the pumping effect of ionization manometers and on new methods of pumping, particularly those based on gas condensation at low temperatures. Some new ultra-high vacuum valves and methods of using them in ultra-high vacuum physics are briefly described. In his conclusions the author mentions particularly the following: a mass spectrometer for analysing rare gases in which an ultra-high vacuum system is used (J.H. Reynolds - Ref 51); apparatus for preparing very pure gases based on using very low pressures

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CZECH/37-59-3-12/29

Methods of Measuring and Producing Ultra-high Vacuum. II.

(M.A. Biondi - Ref 52); vacuum apparatus with auto-emission projectors based on using ultra-high vacuum systems (Refs 22, 53 and K. Mašek, Ref 54); study of oxide cathodes at very low pressures (N.D. Morgulis - Ref 55). The problem of pumping at very low pressures is important in the study of surface properties of metals and particularly of semiconductors (Refs 56,57). Pumping to obtain the lowest possible vacuum is of particular importance in thermonuclear reactors and for pumping-in such reactors titanium vacuum pumps are used (I.V.Kurchatov Ref 58). Ion pumping can be used in sealed-off systems, in some cases in combination with getters; as an example, the study of Morgulis and Gavril'yuk (Ref 59) of the influence of a layer of adsorbed gas on the emission work of electrons from metal is mentioned. The author believes that the first experiments of pumping gases by condensation at very low temperatures may make it possible to develop easier methods of obtaining very high vacuum. Although the information contained in this paper is predominantly based on published Western work, previous

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COUNTRY : Czechoslovakia
CATEGORY :
ASS. JOUR. : RZKhim., No. 5 1960, No. 1261
AUTHOR : Paty, L. and Neuzilova, R.
INST. : Not Given
TITLE : A New Design for a High-Vacuum Ionic Pump of High Pumping Rate
ORIG. PUB. : Ceskoslov Casop Fyz., 5, No 6, 740-742 (1958)
ABSTRACT : The design of a previously described pump (RZhKhim. 1954, no 10, 27619) has been slightly simplified, and the size of the pump has been reduced. The pump begins to operate when the pressure in the space to be evacuated reaches 10^{-2} mm Hg; the maximum pumping of 18 liters/min is achieved at pressures of the order of 10^{-3} mm Hg. The considerable absorption effect on which the evacuation is based decreases sharply when the pressure drops and at $4 \cdot 10^{-4}$ mm Hg becomes negligible in com-

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P. Ty, L.

AUTHORS: Pájka, L. and Nečílový, R.

TITLE: New Design of a High-vacuum Ion Pump with a High Pumping Speed (Nový konstrukce vysokovakuové ionové vývahy se vysokou čerpadlovou rychlosťou)

PERIODICAL: Československý Casopis Pro Fyziku, 1956, Nr. 9,

pp 740 - 742 (Czech)

ABSTRACT: The aim of the authors was to design an ion vacuum pump with a pumping speed, power rating and dimensions smaller than the pump described by J. S. Peter et al (Review of Scientific Instruments, 1955, p. 368) and also to bring about simplifications in the design. Furthermore, the authors aimed at elucidating the nature of the pumping mechanism. The pump described by Peter has a metal discharge tube several metres long. For the purpose of reducing the input vacuum resistance, part of the solenoid winding is located inside the tube. The anode voltage is 500-600 V. The input Power is 40 kW and the pumping rate is 3,000-7,000 litres/sec. The authors attribute this pumping effect to the ion transportation by various authors who received the award for research by various authors who attributed the pumping effect to adsorption, absorption and chemical sorption effects.

The discharge tube of the pump designed by the authors was made of molybdenum 61 m, 42 mm dia., 120 cm long (Figure 1). In the middle of the tube, in the plane transverse to its axis, there are three openings which are interconnected by pipelines. By a suitable arrangement of the solenoid a satisfactory homogeneity of the discharge is achieved which is necessary for the high-current operation. The high-focussed ions in the space in the center of the pump were separated from both pre-vacuum spaces of the pump was separated from both pre-vacuum spaces by two narrow sections so as to prevent reverse diffusion of the molecules between the end of the tube and the tube wall. At the ends, the tube was fitted with gold disc-shaped cathodes made of molybdenum sheet with hot cathodes made of tungsten wire. For vacuum pumping, a rotary pump was fitted to both ends of the discharge tube. One end, a Penning pressure gauge was fitted. The other Penning pressure gauge was sealed, together with the glass envelope, to the input opening of the ion pump. Measurements were carried out of the following: dependence of the pumping speed on the pressure for various intensities of the magnetic field; optimum magnitude of the magnetic field from the point of view of the pumping speed and the deionizing loading; dependence of the pumping speed on the pressure for various values of the anode voltage; influence of the pressure in the input opening on the pumping performance. The pumping speed was evaluated from the decrease in pressure measured by the pressure gauge which was connected to the pumping envelope, the pressure drop in the cathodic lineage was measured by the second pressure gauge and from it the pumping speed was calculated by means of measurement. The critical intensity of the magnetic field and the pumping speed were determined.

The maximum pumping speed of the new pump was increased until a maximum value of 10,000 litres/sec. This was obtained during the short-duration separation of the cathodic envelope from the pump. The authors attempt to explain this effect in the cathode space. It is assumed that the cathodic envelope is too close to the anode. A large number of ions escape from the cathode space. The authors believe that the effect is due to the mechanical action of the cathodic envelope. The mechanical action of the envelope is due to the fact that the cathodic envelope is not yet in motion during the first

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New Design of a H₂-vacuum ion pump with a Liquid Pumping Speed
Tepchuk - 90-0-25/NC
indicates the part of desorption on the total pumping speed depends to a great extent on pressure (see Figure 2) and that for pressures less than 4×10^{-4} cm³ the pumping effect is due to transpiration and recombination of ions. It can be seen from the graph that at lower pressures the role of adsorption is predominant while for lower pressures its role is considerably increased. The curve for Figure 2 corresponds to various magnetic field intensities. Increase of the adsorption effect with increasing intensity of the magnetic field is attributed to considerable temperature rise of the electrodes and the resulting more favourable conditions for their evaporation. Furthermore, the statement appears to be correct that transportation of ions begins at pressures which are on free path is greater than the linear dimensions of the tube. This path is shown in Figure 2. There are 2 dimensions of references, 1 of which is classification and 1 of which is association.

ASSOCIATION: Katedra vysokofrekvenčního a vakuového technika na elektrotechnické fakultě Karlovy univerzity v Praze (Chair for High Frequency and Vacuum Physics, Institute of Mathematics and Physics, Charles University, Prague)

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✓ New high-vacuum, high-speed ion pump. Jibor Patý and Radimka Nezvadová (Karlová Univ., Prague). Cited in Sov. J. Phys. 8, 746-7 (1958) (in English).—The authors describe the construction and the pumping mechanism of an ion pump of improved pumping speed, which needs less power and is smaller and simpler to construct than the pump described by Foster, Lawrence, and Loegren (C.A. 47, 11819d). A. Krembelka

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PATYAKINA, O. K.

Author's method of extraction of foreign bodies from the esophagus.
Vest. otorinolar. 12:6, Nov.-Dec. 50. p. 64-7

1. Of the Clinic for Diseases of the Ear, Nose, and Throat
(Head ... Prof. A. O. Shul'ga), Chkalov Medical Institute.

CLIL 20, 3, March 1951

BOBROVSKIY, N.A., prof.; PATYAKINA, C.K., kand.med.nauk

Basic trends and results of research on otorhinolaryngology in
the research institutes and medical colleges of the R.S.P.S.R.
Biul. uch. med. sov. 2 no.5:9-15 S-0 '61. (MIRA 14:11)
(OTOLARYNGOLOGY)

SAKHAROV, P.P.; GUBKOVA, Ye.I.; KAZANSKIY, I.A.; PATYAKINA, O.K.;
SHISHOVA, N.I.

Specific prophylaxis and treatment of tonsillitis and its
complications. Trudy gos. nauch.-issl. inst. ukha. gorla
i nosa no.11:147-164 '59. (MIRA 15:6)
(TONSILS--DISEASES)

PATYAKINA, O.K.; RYBAKOVA, V.I.

Tissue therapy in certain laryngological diseases. Vest.oto-rin.
17 no.1:62 Ja-F '55. (MIRA 8:5)

1. Iz kliniki bolezney ukha, gorla i nosa (zaveduyushchiy - professor A.O.Shul'ga) Chkalovskogo meditsinskogo instituta.
(TISSUE EXTRACTS)
(OTORHINOLARYNGOLOGY)

L 60142-65 EPA(s)-2/EWT(m)/EPF(n)-2/EWP(t)/EWP(b) Pt-7/Pu-1 IJP(c) JD/JG/NW

ACCESSION NR: AP5016525

UR/012E/65/019/005/0845/0847 1/2

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B

AUTHOR: Patyanin, S. I.; Regel', A. R.

TITLE: Electrokinetic effects in liquid gallium and eutectic (78% K + 22% Na)

SOURCE: Fizika metallov i metallovedeniye, v. 19, no. 6, 1965, 845-847

TOPIC TAGS: gallium, eutectic alloy, electrodynamics, metal physics, liquid metal

ABSTRACT: Electroosmotic pressure was measured in liquid gallium and eutectic 78% K + 22% Na. It was shown that the reflection of the carrier current from the liquid gallium-glass interface for $T \approx 60^\circ\text{C}$ is almost fully diffusive, while for boundaries of the eutectic-kerosene type the coefficient of diffusive reflectivity is about 0.25. Experiments were done in an apparatus which the authors developed earlier for an Hg-glass interface (Atomnaya energiya, 1963). The following formula was used to calculate the above coefficients:

$$P_e = 2hd = 0.8(1 - \epsilon) \epsilon n \frac{\lambda^2}{\rho} U,$$

where P_e is electroosmotic pressure; $2h$ is observed differences in level; d is speci-

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ACCESSION NR: AP5016525

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fic mass of gallium; e is the charge of an electron; n is concentration of conductive current; and $\lambda = 1.5 \times 10^{-7}$ cm. The reflection of conduction electrons on interior boundaries of liquid metals differs strongly from metal to metal, and for changes in temperature. It is also probable that the value for the coefficient of inelastic reflection $(1 - e)$ of electrons depends on the charges, and on the interaction of the surfaces of the liquid metals with solid bodies (glass capillaries). The molecular structure of the surface layer, and the molecular interaction of the substances at boundaries in contact were analyzed. "The authors thank G. E. Pikus for valuable advice in analyzing the experimental data." Orig. art. has: 1 formula.

ASSOCIATION: Institut poluprovodnikov AN SSSR (Institute of Semiconductors, AN SSSR);
Omskiy pedinstitut (Omsk Pedagogical Institute)

SUBMITTED: 02Mar64

ENCL: 00

SUB CODE: MM, EM

NO REF Sov: 003

OTHER: 004

dm
Card 2/2

RAZVANIK, S.I.; RUDOV, A.A.

Appearance of structural viscosity in the surface films of some metals. Ukr. fiz. zhurn. no.6:471-476 (1961).

1. Institut polimernikov Ak. SSSR, Leningrad.

REGEL', A. R.; PATYANIN, S. I.

Electrokinetic effects in liquid mercury. Atom energ. 14
no.1:122-127 Ja '63. (MIRA 16:1)

(Mercury—Electric properties)

401.1
S/089/63/C14/001/013/013
B102/B106

AUTHORS: Regel', A. R., Patyanin, S. I.

TITLE: Electrokinetic effects in liquid mercury

PERIODICAL: Atomnaya energiya, v. 14, no. 1, 1963, 122-127

TEXT: The anomalous effects observed in thin samples whose thickness is comparable to the mean free path of the carriers are ascribed to the fact that only a part (i) of the carriers is elastically reflected at the inner surface of the sample, the rest ($1-i$) being diffusively scattered. Therefore in a thin boundary layer ($\sim 3\lambda$) the mean free path and concentration of the carrier are smaller than inside the sample. Pikus and Fiks (Fizika tverdogo tela, 1, 1062, 1147, 1959) have shown that electrokinetic effects can appear in liquid conductors of small cross section for which $(1-i) \neq 0$. These effects were investigated by the author for mercury at room temperature, emphasizing especially 1) the electrokinetic mobility α of the mercury surface measured in a capillary system, and 2) the Hg level difference in two alike capillaries through one of which, however, a current was passed. The capillaries were

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S/083/61/014/301/011, 013
3102/B186

Electrokinetic effects in ...

evacuated to $\sim 10^{-3}$ mm Hg and provided with a scale (10^4 divisions/cm). Platinum electrodes were adopted in order to keep down the Peltier effect to a minimum. The electrode temperature was measured by iron - constantan couple to an accuracy of $\sim 2 \cdot 10^{-3}$ °C and the Hg temperature could be very accurately fixated by the Hg level, (~ 430 divisions/ $^{\circ}\text{C}$). On the current being passed through one of the capillaries the level displacement rates were of the order of 10^{-5} and 10^{-6} cm/sec. These observed velocities are equal to a . The number of diffusively scattered carriers was

determined from the relation $(1-1) = \frac{eLcX}{0.1en\lambda Vt} + \frac{d\varrho L X}{0.82en\lambda^2 VR} \cdot I_p$ where I_p is the capillary length; c the Hg resistivity; R the resistance of the capillary; d the specific gravity of Hg; V the potential; η the viscosity of Hg; e, n, λ denote the charge, concentration and mean free path of the carriers; X is a function of the electroosmotic pressure characterizing the level displacement. The temperature of the boundary layer of Hg was determined from $T = T_t + V^2 \ln(r_o/r_p)/2\pi \Delta L_p R$, where T_t is the Hg temperature in the

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Electrokinetic effects in ...

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B102/B186

case of thermal equilibrium, r_o and r_p are the external and internal capillary radii ($r_p \sim 10^{-3} - 10^{-2}$ cm) and λ is the thermal conductivity of glass. With $n = 8.4 \cdot 10^{22}$ mm⁻³ and $\lambda = 3.7 \cdot 10^{-7}$ cm it is found that $\alpha = (2.5 \pm 1.2) \cdot 10^{-3}$ cm²/v.sec and $(1-\epsilon) = (2.4 \pm 1.4) \cdot 10^{-2}$ ($T = 20-30^\circ\text{C}$). From the electrokinetic mobility it was found that $(1-\epsilon) = \alpha \eta / 0.1 \epsilon n \lambda^2 \approx 2.1 \cdot 10^{-2}$. There are 3 figures.

SUBMITTED: August 15, 1962

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PATYCHENKO, V.S., inzhener; BEZNIK, V.I., inzhener; ZARAYSKIY, S.I., inzhener.

A TEZ boiler unit for burning Estonian shale. Energomashinostroenie
3 no.7:1-6 J1 '57. (MIRA 10:10)

(Boilers)

BOYKO, Yu.A., inzh.; D. BROKHOTOV, V.I., inzh.; KIEBLIGER, R.L., inzh.
tekhn.nauk; PATYCHENKO, V.S., inzh.; POGORLOV, S.F., inzh.;
TARELKIN, M.P., inzh.

Burning of lignite with a high moisture content. Blok. stn. 3
no. 2:8-1. F 155. MIRA 18(1)

PATYCHENKO, V.S., inzh.; GOL'DENFARB, I.N., inzh.; OSTROVSKIY, L.A., inzh.

New high-power steam boiler for supercritical steam parameters.
Energomashinostroenie 6 no.8:1-11 Ag '60. (MIRA 14:9)
(Steam boilers)

PATYCHENKO, V.S., inzh.; GOL'DENFARB, I.N., inzh.; ITSKOVICH, V.Ya., inzh.

Concerning the collection "Atlas of boiler units" under the
general editorship of A.P.Kovalev. Teploenergetika 7 no.3:
95 Mr '60. (MIRA 13:5)

(Boilers)
(Kovalev, A.P.)

AUTHORS: Patychenko, V.S., Reznik, V.I., and Zarayskiy, S.I. (Engineers).
TITLE : A boiler set of the Taganrog Boiler Works for the Combustion
of Estonian shales. (Kotel'nyy agregat TKZ dlya szhiganiya
Estonskikh slantsev.) 114-7-1/14

PERIODICAL: "Energomashinostroyeniye". (Power Machinery Construction.)
1957, No.7, Vol.3, pp.1-6. (U.S.S.R.)

ABSTRACT: There is at present no operating data on the combustion of
pulverised Estonian shale in high pressure boilers. The shales
are only used in small boilers. In the existing boilers the ash
forms clinkers on the superheater tubes even with medium steam
conditions. There is also heavy wear of the water economiser.
A special approach was therefore required to the problems of
boiler design for high pressure sets burning Estonian shales. The
properties of Estonian shales are then described in detail. They
are low grade, highly reactive power fuels with a calorific value
of 2,100 to 2,700 kcal/kg and an ash content of 14-22% weight.
Some of the ash melts at a very low temperature. The shales con-
tain free calcium carbonate so that the fly ash contains free lime
which reacts with the sulphurous gases to form deposits of CaSO₄.
The ash characteristics govern the temperature ranges of the
boiler processes. In designing a boiler for an output of 220
tons/hour at a steam pressure of 100 atms and a superheat
temperature of 540 C, burning Estonian shales, the following main

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A boiler set of the Taganrog Boiler Works for the Combustion of
Estonian shales. (Cont.) 114-7-1/14

conditions were accepted. In view of the lack of experience in
burning Estonian shales in high pressure boilers only well tried
components and operating conditions would be used. In order to
reduce clinkering of fly ash on the heating surfaces the super-
heater was made of separate screens. Available data shows that in
the gas temperature range of 600 to 650 C built-in ash arresters
do not work reliably and, therefore, the boiler was designed with-
out one. However, in order to remove some of the coarser ash before
the water economiser a special chamber was designed. The boiler
set is then described in detail under the following headings: the
furnace chamber, (of the usual prismatic shape with section 7100
x 9852 mm); the superheater of the radiation-conductive type
(illustrated in Fig.2); the water economiser, which uses a step-
wise motion of the water (Fig.3) so that the boiling part of the
economiser can be in the higher temperature range, thus consider-
ably reducing the size of the steam volume. Figs. 4 and 5 give
data on calculations of the dynamic characteristics of the boiler
with the boiling economiser as an object of the control of water
level in the drum by the procedure proposed by Cand.Tech.Sci.
Z.Ya. Beyrakh. In addition to the dynamic calculations a static
calculation was made of the change of level on instantaneous

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A boiler set of the Taganrog Boiler Works for the Combustion of
Estonian shales. (Cont.)

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removal of 75% of the load. This calculation was based on a modification
of the procedure proposed by Cand. Tech. Sci. L.S. Shumskii. The main
data of the calculation are given in Table 1. Further description of the
boiler equipment continues under the following headings: air heater;
drum, separation device and stepwise evaporation, soot blowing, lining
and installation for mechanised continuous slag removal. The main
design data of the boiler are given in Table 2. The arrangement of the
boiler set in the building is considered briefly.

3/3 There are five figures, two tables.

AVAILABLE :

PATYCHENKO, V.S.

5645. TKZ BOILER PLANT FOR COMBUSTION OF ESTONIAN SHALES.
Patychenko, V.S., Remnik, V.I., and Zorinskii, S.I. (Energomashinostroenie
(Leningrad), July 1957, 1-6). The properties of these shales,
the assumptions made and the boiler design are given. The steaming capacity
is 220 tons/h at 100 atm and 540°C. (L).

PATYCHENKO, V.S., inzh.; SHCHUKIN, Ye.M., inzh.

Concerning V.M. Biman's article "Sectionalizing of gas-oil
operated boilers for 300 to 800 Mw. superhigh-capacity units.
Teploenergetika 8 no.7:80-81 Jl '61. (MIRA 14:9)

1. Taganrogskiy zavod "Krasnyy kotel'shchik".
(Boilers)
(Biman, V.M.)

PATYCHENKO, V.S., inzh.; REZNIK, V.I., inzh.; ZHELEZNYAK, V.F., inzh.

New high capacity boiler unit for burning Estonian shale.
Energomashinostroenie 8 no.2:1-4 F '62. (MIRA 15:2)
(Boilers--Firing) (Estonia--Shale)

S/114/60/000/001/001/008
E194/E455

AUTHORS: Patychenko, V.S., Engineer and Shmul yan T.L.,
Engineer

TITLE: High-Output Boiler Sets Manufactured by the Taganrog
Boiler Works "Krasnyy kotel'shchik"

PERIODICAL: Energomashinostroyeniye, 1960, No.1, pp 1-7

TEXT: In order to make power stations more economic steam conditions are being raised and set outputs increased. Also capital expenditure can be reduced by burning natural gas or fuel oil. Accordingly, the Taganrog Boiler Works has begun to make large boilers for super-high steam conditions, with outputs ranging, at present, from 420 to 640 tons per hour and later to 950 to 1850 tons per hour. A series of boilers has been completed with an output of 420 tons per hour at 140 atm 570°C it has three variants, for burning anthracite dust, dry coal and gas or fuel oil respectively. The first of these boilers TM-80 (TP-80), employs the usual inverted-U arrangement. The construction has been described in detail in an article by Getalo and Yeremin in Energomashinostroyeniye, 1968, No.5, and so only the briefest of details are given here. Boiler type Card 1/6

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High-Output Boiler Sets Manufactured by the Taganrog Boiler Works "Krasnyy kotel'shchik"

TM-82 (TP-82), designed to burn coal, differs in the following respects from boiler type TP-80. The furnace chamber is not so high and the thermal loading is greater. The lower screen tube arrangement has been altered, particularly below the burners, and the arrangement of the tail-end heating surface is different. The radiation superheater is installed on the front wall of the furnace chamber and the dry method of ash removal is used. The boiler for burning gas or fuel oil, type TGM-84 (TGM-84), is much lighter and cheaper than those for burning anthracite dust or coal. The usual inverted-U arrangement of heating surfaces is used but the horizontal gasway is much reduced and contains only a screen superheater. The downflow shaft contains the convective horizontal superheater and water economizers. Measures taken to deal with corrosion resulting from the high sulphur content of the fuel oil are described. With the different types of fuel, the steam output and steam conditions remain the same but the special design uses much less metal and reduces the size of the boiler and

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High-Output Boiler Sets Manufactured by the Taganrog Boiler
Works „Krasnyy kotel'shnik“

building required. Since 1957 manufacture has commenced of large boilers type ТМ-90 (TP-90) with output of 500 tons per hour at a pressure of 140 atm at 570°C with reheat to 570°C. They burn anthracite dust and are intended for operating as a unit with a turbine of 150 MW. The construction of this boiler and the advantages and disadvantages of the T-arrangement of gasways is described in the article by Gol'denfarb and Getalo in Energomashinostroyeniye 1958, No. 11, and is not repeated here. Design work has started on a modified boiler intended to burn dry coal of the Kizel type, this boiler will be known as type ТМ-92 (TP-92), and a drawing is given in Fig. 3. The furnace volume is smaller and more heavily loaded, and so the boiler is smaller than that intended for burning anthracite dust. Therefore the ordinary inverted-U arrangement will be used, in combination with a number of new technical features. In this boiler, the secondary reheat is controlled by recirculating flue gases in the lower part of the furnace chamber. The gases are taken off from

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High-Output Boiler Sets Manufactured by the Taganrog Boiler Works "Krasnyy kotel'shchik"

the downflow shaft beyond the water economizers. The project has been completed for a boiler type (TGM-94) ТГМ-94, of special design, intended for burning gas or fuel oil. This set is described in the article by Parshin, Reznik and Kharkin published in this number of the journal (and abstracted). The next series of large boilers manufactured by the Taganrog Works have an output of 640 tons per hour at a pressure of 140 atm and 570°C with reheat to 570°C and are intended for working as a unit with turbines of 200 MW. The first boiler of this kind, type ТР-100 (TP-100), for burning anthracite dust, is being manufactured. It is a further development of the boiler types TP-90 and uses the T-arrangement. The new boilers are 3 m deeper than the old and the thermal loading is higher, being 133000 kcal/m³hour. Other special features of boiler type TP-100 include cross-arrangement of the pulverized fuel/gas burners in place of angular arrangement, recirculation of gas in the lower part of the furnace when the fuel used is natural gas, thus maintaining constant reheat.

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High-Output Boiler Sets Manufactured by the Taganrog Boiler
Works "Krasnyy kotel'shchik"

steam temperature, and the use of rotating types of regenerative and air heaters. The main characteristics of the boilers type TP-90 and TP-100 are given in Table 3. The Works is attending to new technical problems: supercritical steam conditions of 255 atm with reheat of 585 to 570°C, and the manufacture of boilers for unit sets of 300 to 600 MW are being considered. The first step in this direction is the completed technical design for a boiler with an output of 950 tons per hour, burning anthracite dust, to run as a unit with a turbine of 300 MW. This boiler will be known as type ТМ-110 (ТРР-110). The inverted-U arrangement is used in two variants, one having a single furnace and two separate downflow shafts and the other having two separate semi-boilers. The variants are illustrated in Fig. 5 and 6. In both types the primary superheater is located in one downflow gasway and the reheat superheater in the other parallel one. However, the method of reheat temperature control is different in the two cases. A number of other

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PATYCHENKO, V.S.

✓ 725. PRODUCTION OF TP-34-1 BOILERS FOR EXTRA HIGH STEAM PARAMETERS.
Patychenko, V.S. and Ostrovskii, I.A. (Energoreshinstroen) (Per. Much.,
U.S.S.R.), Apr. 1954, (4), 7-13). At the Cherepovets power station in 1953
the first of this new type of boiler, designed for operation with extra high
steam parameters, was produced. With a nominal steam output of 240 t/h, pressure
of primary steam behind steam cut-off valve 175 atm, and superheated steam
temperature 555°C, the boilers are planned to provide steam to 150 MW turbines,
two boilers to a turbine. Design features are described. C.E.A.

PATYCHENKO, V.S., inzhener; OSTROVSKIY, L.A., inzhener.

Development of the TP-240-1 boiler for very high steam parameters.
Energomashinostroenie no.4:7-13 Ap '56. (MLRA 9:7)
(Boilers)

PMT & EV, V.V.

✓ Oxidation of Iron in Air at High Temperature. V. V. Tikhonov. Dokl. Akad. Nauk S.S.R., 1954, 94, (5), 594-598. [In Russian]. The kinetics of scale formation, its composition and structure were investigated. Kinetics of the process was followed by continuous weighing and the structure and composition of the scale were determined by micrographic X-ray and chemical analysis. Oxidation of Armco iron containing 0.05% of carbon in dry and moist air in the temperature range 800-1054°C. was studied. It was shown that the oxidation in dry air takes place according to the equation $\frac{g}{g_0} = k t$, where $\frac{g}{g_0}$ = increase of weight in mg per cm², t = time in min., and k = constant characteristic for a given temperature. For practical purposes the equation $\log \frac{g}{g_0} = 8.625 - \frac{3910}{T}$

$\log \frac{g}{g_0}$ (T = absolute temperature) is proposed. During oxidation above 750°C. the scale consists of three layers: FeO , Fe_2O_3 and Fe_3O_4 ; during oxidation at temperatures below 870°C. of two layers: FeO and Fe_3O_4 . The dependence of the composition of scale on the temperature of oxidation is presented in graphical form.—V.G.

KRASIL'NIKOVA, A.; LEBEDEVA, A.; ALIFANOV, V.; BASIN, D.; PATYK, B.

"Urgent problems in developing the shoe industry" (A.V.Belakov
"Legkaya promyshlennost'" no.8, 1954). Leg.prom. 15 no.9:53
(MLBA 9:1)
S '55.

1.Simferopol'skiy kozhevenno-obuvnoy kombinat no.2 imeni
Dzerzhinskogo (for Krasil'nikova and Lebedeva).2.Leningrad-
skiy filial tsentral'nykh tekhnicheskikh kursov (for Alifanov,
Basin and Patyk).
(Shoe industry)

PATYK, S.

TECHNOLOGY

PERIODICAL: GAZ, WODA I TECHNIKA SANITARNA. Vol. 32, no. 11, Nov. 1958
PATYK, S. Possibilities of the appearance of liver fluke infection in
ruminants grazed on the lands in the Breslau area irrigated with
municipal sewage. p. 432.

Monthly List of East European Acquisitions (EAAI) LC Vol. 8, No. 4.

April 1959, Unclass

L 055-46-07 RO

ACC NR: AP6031996

(A) SOURCE CODE: PO/0071/66/000/006/0330/03:1

AUTHOR: Patyk, S. (Doctor; Wroclaw)

ORG: Chair of Zoology, Department of Animal Husbandry, Higher School of Agriculture, Wroclaw/headed by Prof. Dr. Stanislaw Chudoba (Katedra Zoologii Wydziału Zootechnicznego WSR)

TITLE: Importance of a 2% solution of Z-50 organophosphorus insecticide as a prophylactic for cattle against insect bites

SOURCE: Medycyna weterynaryjna, no. 6, 1966, 330-331

TOPIC TAGS: veterinary medicine, animal husbandry, hypoderminosis, insect control, insecticide, organophosphorus compound/Z-50 insecticide

ABSTRACT: In April and June 1965 tests with calves (10 experimental, and 10 control animals) were undertaken to investigate whether spraying with a 2% water emulsion of the experimental Z-50 preparation (a thiophosphoric acid ester) protects cattle against gadflies for 3 weeks. The two tests proved that infestation of the sprayed animals by gadflies was nearly 69 per cent less than in the control group.

Cord 1/2

L 05846-67

ACC NR: AP6031996

Z-50 had no toxic effects. More testing is needed before releasing the compound for widespread use in cattle raising. Its effectiveness rate must also be increased so that it remains active at least 6 weeks. The ester was also effective against flies attacking calves. Orig. art. has: 1 table. [W A SD] [DR]

SUB CODE: 02, 06, 07 / SUBM DATE: none /

Card 2/2 egfr

PATYK, Stanislaw (Wroclaw)

Gastrointestinal parasites in cattle in the Western Territories.
Wiadomosci parazyt., Warsz. 2 no. 5 Suppl:171-172 1956.

1. Katedra Parazytologii i Chorob Inwazyjnych WSR.
(HELMINTH INFECTIONS, epidemiology,
in cattle in Poland (Pol))
(CATTLE, diseases,
helminthiases in Poland (Pol))

PATYK, Stanislaw

Helminth eggs in Wroclaw sewage and on meadows and pastures irrigated by city sewage. Wiadomosci parazyty., Warsz. 4 no.5-6:479-480. Engl. transl. 480-481 1958.

1. Z Zakladu Parazytologii i Chor. Inw. WSR we Wroclawiu.

(HELMINTHS,

eggs in sewage & fields irrigated by sewage (Pol))

(SEWAGE, microbiology,

helminth eggs in sewage & fields irrigated by sewage (Pol))

(SOIL. microbiology,

helminth eggs in sewage-irrigated fields (Pol))

PATYK, Stanislaw

Observations on Laminosiopes ecysticola. Wiadomosci parazyt., Warsz.
4 no.5-6:611; Engl. transl. 612 1958.

1. Z Zakladu Parazytologii i Chorob Iwazyjnych WSR we Wrocławiu.

(ARACHNIDA,

Laminosiopes ecysticola infect. of chickens (Pol))

(FOWLS, DOMESTIC, die.
same)

PATYK, Stanislaw

Helminths in the alimentary tract of cattle in West Poland. Acta
Parasit 8 no.8/20:231-253 Je '60. (EEAI 9:11.)

1. Katedra Parazytologii W.S.R. Wroclaw.
(Poland--Cattle) (Poland--Helminths)

PATYK, Stanislaw (Wroclaw)

Pulmonary, hepatic, and digestive parasites in cattle fed on pastures irrigated by sewage waters. Wiadomosci parazyt., Warsz.
? no. 5 Suppl:157-158 1956.

1. Katedra Parazytologii i Chorob Iwmazyjnych WSR.
(LUNG DISEASES, epidemiology,
parasitic dis. in cattle fed on pastures irrigated by
sewage water (Pol))
(LIVER DISEASES, epidemiology,
same)
(GASTROINTESTINAL DISEASES, epidemiology,
same)
(PARASITIC DISEASES, epidemiology,
gastrointestinal, liver & lung dis. in cattle fed on
pastures irrigated by sewage water (Pol))
(CATTLE, diseases,
gastrointestinal, liver & lung parasitic dis. in cattle
fed on pastures irrigated by sewage water (Pol))
(SEWAGE,
same)

PATYK, Stanislaw

On differences between nematoda Haemonchus parasitizing cattle and
sheep. Wiadomosci parazytyczne, 7 no.2:309-312 '61.

1. Katedra Parazytologii i Chorob Inwazyjnych WSR, Wrocław.

(TRICHOSTRONGYLOIDEA transm) (CATTLE parasitol)
(SHEEP parasitol)

PATYK, Stanislaw

Worm infestation in lambs grazed on Wroclaw pasture irrigated with
city waters. Wiadomosci parazyty. 7 no.2:355-357 '61.

1. Katedra Parazytologii i Chorob Inwazyjnych WSR, Wroclaw.

(HELMINTIASIS veterinary) (SHEEP parasitol)
(SEWAGE microbiol)

PATYK-KARA, N.G.

Characteristics of the geomorphology of the northern and western slopes
of Mount Elbrus. Inform. abor. o rab. Geog. fak Mosk. gos. un. po Meteorolog.
geofiz. godu no. 5:59-86 '60. (MTUSS, 1960)
(Elbrus, Mount—Geomorphology)

PATYNSKI, Jerzy; HLAVATY, Antoni; BURKA, Jan; SZCZEKOT, Jozef; DANKO,
Stanislaw

Attempted clinical and radiological differentiation of senile
and deforming changes of the hip joint. Chir.nerz.ruchu ortop.
polska 24 no.6:

1. z Kliniki Ortopedycznej AM w Gdansku. Kierownik: doc.dr
A. Senger.
(HIP pathol.)

BURKA, Jan; HLAVATY, Antoni; PATYNISKI, Jerzy; SZCZEKOT, Jozef

Results of the examination of senile hips of inmates of a home
for the aged in Wejherowo. Chir.narz.ruchu ortop.polska 24 no.6:
553-559 '59.

1. Z Kliniki Ortopedycznej AM w Gdansk. Kierownik: doc.dr.
A. Senger.
(HIP pathol.)

HLAVATY, Antoni; PATYNSKI, Jerzy; SZCZEKOT, Jozef; BURKA, Jan

Analysis of clinical and radiological pictures of deforming changes of the hip joint. Chir.narw.ruchu ortop.polska 24 no. 6:561-568 '59.

1. Z Kliniki Ortopedycznej AM w Gdansk. Kierownik: doc.dr A. Senger.
(HIP pathol.)

PATYNSKI, Jerry

Patrynski, Jerry, 57, working in Poland, taught at the Institute of
Child Health, Warsaw Orthop. Pol. 29, no. 68744-754 - 164

1. Z. Patrynski, pedagogiczny Akademii Medycznej w Warszawie
(kierownik katedry fizjomed. A. Senger).

PATYNISKI, JERZY

PATYNISKI, Jerzy; SZCZEKOT, Jerzy; SZWALUK, Franciszek

Scoliosis in the light of statistics. Chir. narz. ruch 22 no.2:
111-114 1957.

1. Z Kliniki Ortopedycznej A. M. W. Gdansku Kierownik: prof. dr
Z. Ambros Gdańsk, ul. Swierczewskiego 4, Klinika Ortop.

(SCOLIOSIS, statist.

in school child.

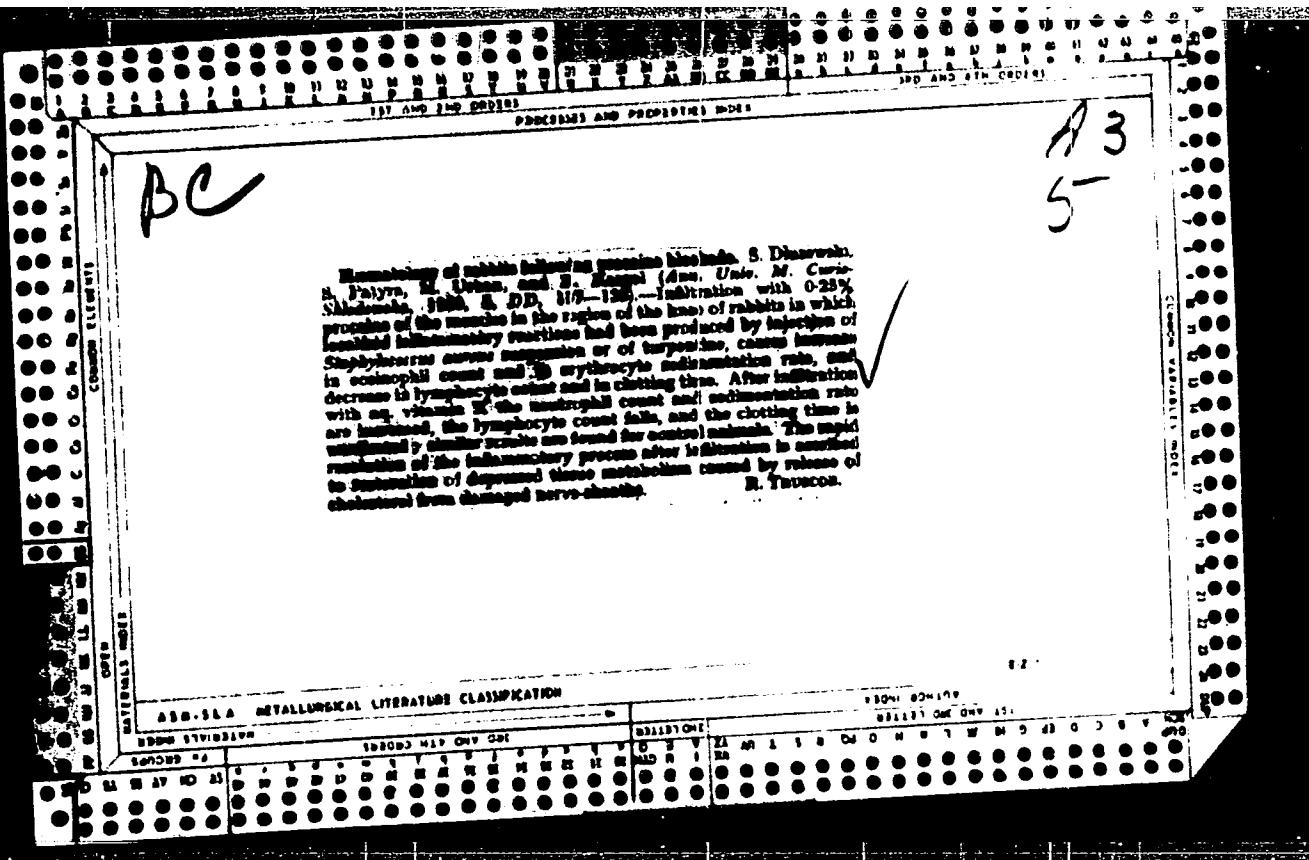
(SCOLIOSIS, in inf. & child

in school child., statist. (Pol))

SUMMARY, KAMTSCHA PENINSULA, RUSSIA

AIRPORT INFORMATION: There are no airports or landing strips with permanent fueling facilities available in the area.

- 1. Z. Svetozarskaya (Kamchatka) - no fueling facilities.
- 2. Anadyr (Anadyr) - no fueling facilities. Located on the Kamchatka Peninsula (Russia) at approximately 60° N, 160° E.



PATYRA, W.

Bull. Soc. M. U.S.S.R.
July 1953
Blood & lymph

✓ Clinical value of blood tests in bovine tuberculosis. W. Patyra
(Izv. Akad. Nauk SSSR, Med. Nauki, 1952, 6 (DD), 425-434)
Acute cases exhibit some degree of leucopenia with increase in the
erythrocyte sedimentation rate. These differences are not found in
chronic cases. R. Trusco

PATYRA, Waclaw
SURNAME, Given Names

Country: Poland

Academic Degrees: not given

Clinic of Internal Diseases (Klinika Chorob Wewnetrznych),
Affiliation: College of Agriculture (WSR--Wyzsza Szkoła Rolnicza), Lublin;

Director: Prof. Zdzislaw FIMIK, Dr.

Source: Warsaw, Medycyna Weterynaryjna, Vol XVII, No 6, June 1961, p. 352.

Data: "Coccidiosis in Breeding Silver Foxes."

(2)

77

U.S. GOVERNMENT PRINTING OFFICE 1964 5-600-10007-3

PATYRA, Wacław
SURNAME, Given Names

(3)

Country: Poland

Academic Degrees: not given

Clinic of Internal Diseases (Klinika Chorob Wewnętrznych), Veterinary Division

Affiliation: sion (Wydział Weterynarii), Higher Agricultural School (WSR --- Wyższa
Szkola Rolnicza) Lublin; Director, Prof Zdzisław FINIK, dr.

Source: Warsaw, Medycyna Weterynaryjna, Vol XVII, No 9, September 1961, pp 536-537

Data: "Mites in the Feed of Animals."

/54

0PO 981643

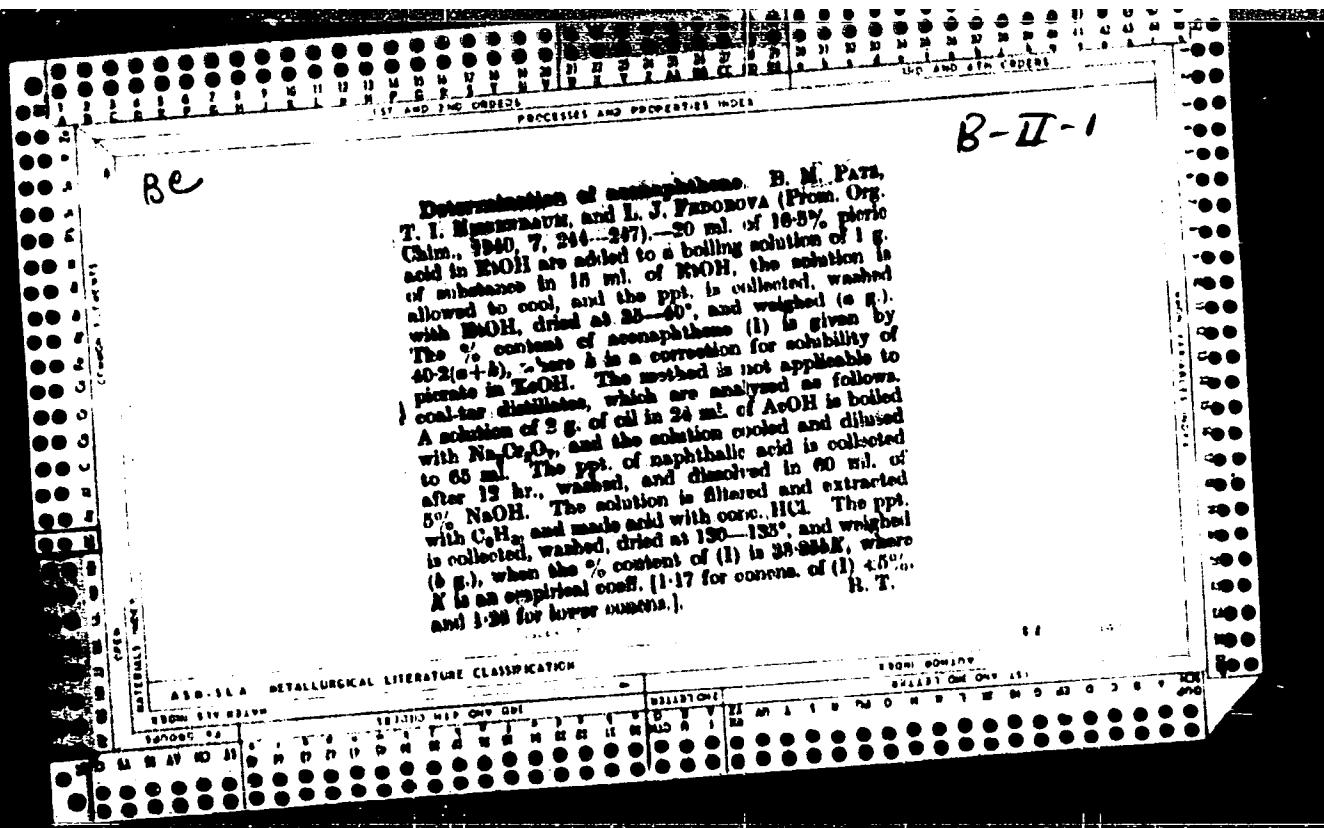
PATYUK, G.O. (latink, H.O.)

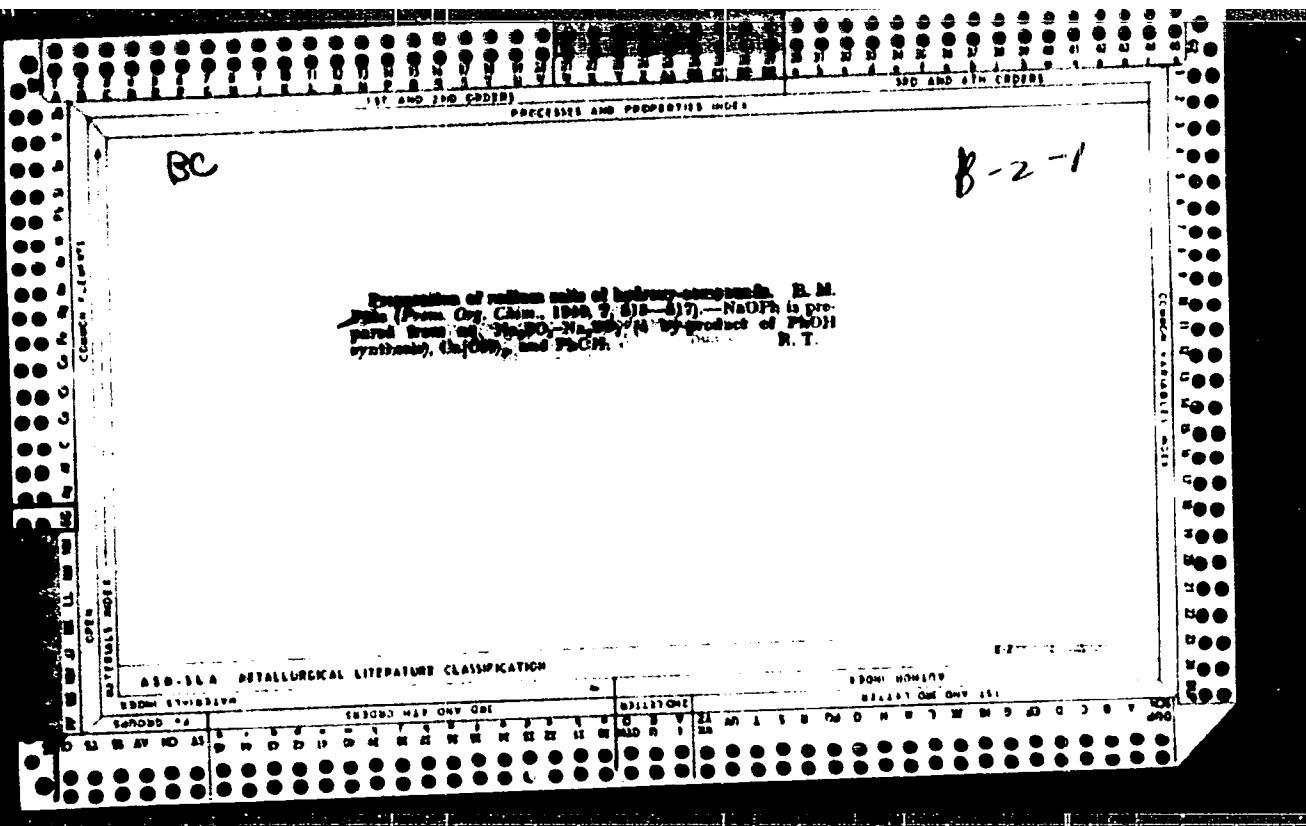
Preventing the damaging of reeds during their travel on boats. Len.
(Int 17:10)
prot. no. 3:5*-56 J1-S '64.

PATYUNIN, P.A.; PANFIROVA, N.G.; KONSHIN, M.Ye.

Research in the field of the chemistry of heterocycles. Part 25.
Synthesis of 9-phenylacridine from acyl derivatives of 2-amino-
triphenylcarbinol. Zhur. ob. khim. 26 no.7:2050-2052 J1 '56.
(MLRA 9:10)

1. Molotovskiy farmatsevticheskiy institut.
(Acrudube) (Methanol)





"APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001239510007-3

The heavy fractions of "Donbas" coal tar and study of
their purification N. Narishkin and V. Mata. Ukr
and Chem. (U. S. S. R.) 1932, No 9, 49-62 J. S.

APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001239510007-3"

PATYK, Stanislaw

From parasitological studies on the sewage of the city of Breslau.
Zeszyt probi post nauk roln 47:99-109 '64
I. Department of Parasitology and Infectious Diseases, College
of Agriculture, Wroclaw.

ZARNOWSKI, Eugeniusz; PATYK, Wladyslaw

On the independence of the species Thominx bohmi (Supperer, 1953) and
its occurrence. Acta parasit 8 no.8/20:205-213 Je '60. (EEAI 9:11)

1. Katedra Parazytologii W.S.R. Lublin.
(Poland--Thominx)

PATKA, M., inzh.

Making crosspieces by the method of pressing. Stroitel' no.10:
(MIRA 13:9)
10 0 '60.
(Reinforced concrete)

"APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001239510007-3

1971
... jednostki oficerskiej batalionu lek. kadr. ruchu ortop. pol. 10
... 1975-86) 16...
... Wyższej Szkoły Medycznej w Gdansku (Kierownik:
... Prof. dr. med. A. Bęgier).

APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001239510007-3"

HLAVATY, Antoni; PATYNSKI, Jerzy; SZCZEKOT, Jozef

Radiologic osteometry of the hip. Chir.narz.ruchu ortop.polska
24 no.6:541-546 '59.

l. z Kliniki Ortopedycznej AM w Gdansku. Kierownik: doc.dr
A. Senger.
(HIP radiogr.)

PATYRA, Ryszard; SZCZEKALA, Zenon

On hepato-renal syndromes. Pol. tyg. lek. 16 no.51:1982-1986 18 D '61.

1. Z Zakladu Patologii Ogolnej i Doswiadczonej A.M. w Lublinie;
kierownik prof. dr med. Jaroslaw Billewicz-Stankiewicz.

(LIVER DISEASES) (KIDNEY DISEASES)

KYPA, Stanislav; NAGI-STASIAK, Barbara

Effect of coumarin on blood coagulation in rabbits. Acta physiol.
Praha 15 no.4:535-54 Jg '64

z Katedry Fizjologii Zwierząt WSR w Lublinie (Kierownik: doc.
dr. M. Pytasz).

PATYRA, Waclaw
SURNAME, Given Names

Country: Poland

Academic Degrees: not given

Clinic of Internal Diseases (Klinika Chorob Wewnetrznych), Veterinary Division

Affiliation: sion (Wydzial Weterynarii), Higher Agricultural School (WSR -- Wyzsza

Szkola Rolnicza) Lublin; Director, Prof Zdzislaw FINIK, dr.

Source: Warsaw, Medycyna Weterynaryjna, Vol XVII, No 9, September 1961, pp 536-537

Data: "Mites in the Feed of Animals."

670 981643

GINDIN, L.M.; BOBIKOV, P.I.; PATYUKOV, G.M.; DAR'YAL'SKIY, V.A.;
BRODNITSKIY, K.P.; KASAVIN, I.A.

Electrolytic extraction of high-purity cobalt. TSvet. met.
(MIRA 14:12)
34 no.12:22-26 D '61.
(Cobalt--Electrometallurgy)

GINDIN, L.M.; BOBIKOV, P.I.; PATYUKOV, G.M.; ROZEN, A.M.; KUBA, E.F.;
BUGAYEVA, A.V.

Separation of mixtures of metals by exchange extraction with
carboxylic acids. Ekstr., teor., prikl., app. no. 2:87-111 '6.
(MIRA 1:1)

(Metals) (Extraction (Chemistry)) (Acids, Organic)

31739
S/136/61/000/012/001/006
B091/E335

183100

AUTHORS: Gindin, L.M., Bobikov, P.I., Patyukov, G.M.
Dar'yal'skiy, V.A., Brodnitskiy, K.P. and Kasavin, I.A.

TITLE: Electrolytic-extraction method for the production of
high-purity cobalt

PERIODICAL: Tsvetnyye metally, no. 12, 1961, 22 - 26

TEXT: The basic method for the production of high-purity cobalt is its purification from other metals by double extraction and the final electrolytic separation of the metallic cobalt. Cobalt is separated from less alkaline metals during double extraction and, subsequently, it is separated from more alkaline ones, which plate out at the cathode to a certain extent, by electrodeposition. In the above technological scheme, an ion-exchange separation from Pb and Zn is used, in addition to the double-extraction purification of cobalt solutions. However, variations of this scheme are possible in which only extraction-purification without ion exchange is carried out. This method is based on the double reactions between metals in different phases: in the organic phase, in the form of fatty acid salts (soap) and Card 1/3

31739
S/136/61/000/012/001/006
E091/E335

Electrolytic-extraction method ...
in the aqueous phase, in the form of mineral acid salts
(chlorides or sulphates). Fatty acids of the C₇-C₉ fraction
(monocarbonic acids of the aliphatic series) are used in the
organic phase; these participate in the formation of the
corresponding metal salts and are also solvents for the soaps
formed. The principles underlying this method are discussed
and the procedure is outlined. The method has many advantages
over the double extraction-electrolytic one. The following are
the main advantages: 1) the purification of the Co solution
from impurities is completely automated and mechanized;
2) filtration of solid cakes and operations associated with
processing and unloading are dispensed with;
3) the extraction of Co is higher and the losses lower;
4) compared with the normal hydrometallurgical process, this
method of Co-production results in a higher quality metal;
5) purification is carried out at normal temperature and
pressure;

Card 2/3

Electrolytic-extraction method .. ³¹⁷³⁹
S/136/61/000/012/001/006
E091/E335

6) working conditions are healthier;
7) production costs are lower.

There are 1 figure, 1 table and 4 Soviet-bloc references.

X

Card 3/3

S/0048/64/028/001/0191/0197

AP4010320

AUTHOR: Patyukova, Z.M.

TITLE: Influence of the magnetic field on the thermoelastic effects in nickel and nickel-silicon alloys [Report, Symposium on the Questions of Ferro- and Antiferromagnetism held in Krasnoyarsk, 25 June to 7 July 1962]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no.1, 1964, 191-197

TOPIC TAGS: thermoelastic effect, magnetoelastic effect, thermo-emf, magnetic hysteresis, elastic hysteresis, ferromagnets, nickel, nickel-silicon alloy

ABSTRACT: Hitherto there have been few investigations of the thermoelastic effect; accordingly the present work was devoted to study of the elastic thermo-emf in magnetized specimens of nickel and nickel-silicon alloys. The specimens were in the form of wires 0.4 to 0.5 mm in diameter and 165-170 mm long. The alloy specimens contained from 0.5 to 4% Si by weight. The specimens were stressed by means of a pair of communicating vessels containing water, the load being varied by allowing more or less water to flow into or out of the vessel suspended from the wire. The results are presented in the form of figures giving the variation of the thermo-emf

Card 1/2

AP4010320

with the tensile stress for different values of the field and in the form of field dependences of the magnetization. The principal results are also tabulated. The general regularities as regards the elastic thermomagnetic effect and the thermomagnetic elastic effect (i.e., the effects depending on whether the stress or field is applied first) observed for nickel hold in general for the investigated Ni-Si alloys. Orig.art.has:2 tables and 6 figures.

ASSOCIATION: Institut fiziki, Sibirskogo otdeleniya Akademii nauk, SSSR (Institute of Physics, Siberian Division, Academy of Sciences, SSSR)

SUBMITTED: OO

DATE ACQ: 10Feb64

ENCL: OO

SUB CODE: PH

NR REF Sov: 007

OTHER: 002

2/3
Card

KIRENSKIY, L.V.; PATYUKOVA, Z.M.

Elastic hysteresis of the thermoelastic effect in nickel and nickel-silicon alloys. Izv. AN SSSR. Ser. fiz. 28 no.1:198-201 Ja '64.
(MIRA 17:1)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR i Yeniseyskiy
pedagogicheskiy institut.

PATYUKOVA, Z.M.

Relationship between a thermo-e.m.f. in nickel and magnetization.
Izv. AN SSSR. Ser. fiz. 28 no.1:172-177 Ja '64.

Effect of a magnetic field on the thermoelastic effect in nickel
and nickel-silicon alloys. Ibid.:191-197 (MIRA 17:1)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR.

S/0048/64/028/001/0172/0177

AP4010316

AUTHOR: Patyukova, Z.M.

TITLE: Relation between the elastic thermo-emf in nickel and the magnetization
Report, Symposium on Questions of Ferro- and Antiferromagnetism held in Krasnoy-
arsk, 25 June to 7 July 1962

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no.1, 1964, 172-177

TOPIC TAGS: thermoelastic effect, stress effect, elastic strain, nickel, thermo-emf, magnetization, mag-
netic effect

ABSTRACT: The appearance of a thermo-emf in the presence of a temperature gradient
in a circuit consisting of a deformed and nondeformed metal is usually attributed
to distortion of the crystal lattice. The influence of magnetization on elastic ef-
fects has not as yet been studied experimentally, although theory predicts that ei-
ther such effect should obtain (N.S.Akulov, Ferromagnetism (Ferromagnetism) M.1939). Ac-
cordingly, in the present work there was investigated the elastic thermo-emf (ther-
moelastic effect) in magnetized nickel. The measurements were carried out on
a modification of the conventional set-up employed for investigating phenomena of

AP4010316

this type. The specimens were 165-170 mm lengths of 0.5 mm diameter electrolytic nickel wire, vacuum annealed for 3 hours at 1000°C; these were joined to copper wires to form the investigated thermocouple. The Seebeck emf, due to the temperature gradient along the specimen, was compensated by means of a copper-constantan thermocouple connected in series opposing with the investigated thermocouple, and was also mounted inside the magnetizing solenoid. The additional thermo-emf appearing as a result of stressing of the specimen (the thermoelastic effect) was measured by means of an M17/4 mirror galvanometer. The magnetizing solenoid was capable of producing a uniform magnetic field of up to 1000 Oe over a section 20 cm in length. All the measurements were carried out at a constant temperature difference of 56°C between the junctions; the cold junction was maintained at 10-12°C. The main experimental results are shown in Figs.1 and 2 of the Enclosure; these show the variation of the total thermo-emf with variation of the stress σ at different values of the constant magnetic field, and the variation of the thermo-emf as a function of the magnetization at different values of σ. The experimental results are discussed from the standpoint of the predictions of theory. The results indicate that in the region of weak tensile stresses the elastic effect at a constant value of the magnetization is a linear function of the stress, which is also true for the demagnetized state, but the proportionality factor between the thermo-emf

Card 2/5

AP4010316

and the stress is a quadratic function of the magnetization, which is in qualitative agreement with theory. In the high field region where rotation of the magnetic vector predominates the variation of the elastic thermo-emf is approximately described by an equation of the form

$$\epsilon_{\text{eff}} = \frac{3}{2} \frac{\epsilon_0}{I_0^2} (I_0^2 y - I_H^2),$$

which indicates that if the applied magnetic field is strong enough to "freeze" all the I_0 in the direction of the field, subsequent application of a tensile stress cannot alter the orientation of the vectors, so that the thermoelastic effect does not appear. Orig.art.has: 7 formulas, 1 table and 7 figures.

ASSOCIATION: Institut fiziki Sibirskogo otdeleniya, Akademii nauk SSSR (Institute of Physics, Siberian Division, Academy of Sciences, SSSR)

SUBMITTED: OO

DATE ACQ: 10Feb64

ENCL: 02

SUB CODE: PH

NR REF SOY: 005

OTHER: 000

Card3/1

AP4010321

S/0048/64/028/001/0158/0201

AUTHOR: Kirenskiy, L.V.; Patyukova, Z.M.

TITLE: Investigation of elastic hysteresis of the thermoelastic effect in nickel and nicle-silicon alloys [Report, Symposium on Questions of Ferro- and Antiferromagnetism held in Krasnoyarsk, 25 June to 7 July 1982]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, n.28, no.1, 1964, 198-201

TOPIC TAGS: thermoelastic effect, thermo-emf, Thomson effect, stress hysteresis, hysteresis loop, magnetoelastic effect, nickel, nickel-silicon alloy

ABSTRACT: The Thomson (thermo-emf) effect in ferromagnets is characterized by some distinctive and interesting features connected with the presence in them of spontaneous magnetization. There have, however, been few investigations of the hysteresis of the thermoelastic effect, that is, of the difference between the thermo-emf curves obtained incident to application and removal of stress in the case of iron and other ferromagnetic specimens. The present work was concerned with investigation of hysteresis of the elastic thermo-emf in nickel and nickel-silicon alloys containing 0.5 to 4% Si by weight, both in the absence of an external field

Card 1/3

AP4010321

and in the case of preliminary magnetization of the specimen. The experimental set-up and procedure have been described earlier by one of the authors (Z.M.Patyukova, IZV.AN SSSR,Ser.fiz.28,172,1963) (see Abstract ACC NR AP4010316). The results of the stress cycling experiments for demagnetized and magnetized specimens are presented in the form of curves. It was found that preliminary application of a magnetic field does not change the general character of the hysteresis up to fields close to the value for technical saturation, the point at which hysteresis disappears. A residual effect, observed in magnetized specimens, disappears after demagnetization of the specimen in the unstressed state and the initial shape of the thermo-emf curves is re-established. A magnetic field applied prior to application of the tensile stress leads at first to increase in the area of the hysteresis loop (to a maximum value in a field of about 38 Oe) and then to rapid decrease of the area with further increase of the field. In cases of plastic deformation "negative" hysteresis is observed. Elastic hysteresis of the thermoelastic effect in ferromagnets may be attributed to irreversible changes in the domain structure under the influence of elastic stresses. Orig.art.has: 4 figures.

2/3
Card

AP4010321

ASSOCIATION: Institut fiziki Sibirs'kogo otdeleniya Akademii nauk, SSSR (Institute of Physics, Siberian Division, Academy of Sciences); Yeniseyskiy pedagogicheskiy institut (Yenisey Pedagogical Institute)

SUBMITTED: OO

DATE ACQ: 10Feb64

ENCL: 00

SUB CODE: PH

NR REF SOV: 008

OTHER: 000

Card 3/3

"APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001239510007-3

Pat-20K,

204. Importance of vulcanisation retarders in
rubber technology. I. PATAK. Abstract: *Plaste u.*
Kautschuk, 1960, 8, 232. The importance of retarders
generally, individual products and their relationships
to chemical constitution, and test procedures
were described. 4326122

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CIA-RDP86-00513R001239510007-3"

PATZAN, Stefan

Classification of motor oils by the Society of Automotive
Engineers. Wiad naft 6 no.1:21-22 '60. (EEAI 9:6)
(United States-- Lubrication and lubricants)

POLAND/Chemical Technology. Chemical Products and Their Uses. Part III. Chemical Processing of Natural Gas and Petroleum. Motor and Rocket Fuels. Lubricants.

Abs Jour : Ref Zhar-Khimiy , N 15, 1958, 51585

Author : Iatzaus, S,

Inst : -

Title : Determination of Combustion of
Lignite. Products.

Orig Pub : (Krakow) Nauka, 1957, 9, p 1, 2

Abstract : Results of the comparative determinations
of the heat of combustion of different
fuels. -- A. Bulnicki

Card : 1/1

PATZAU, Stefan, mgr

Reversion of the softening temperature of engine oils. "Afco"
21 no.4:105-107 mp '77.

i. Institute of Petroleum Technology, Krakow.

FATZAU, S.

The influence of lead soaps on the strength of lubricating film. p. 131
The influence of lead soaps on the strength of lubricating film. p. 131

NFTK. (Instytut Naftowy) Krakow, Poland. Vol. 5, no. 5, May 1959

Monthly List of European Accessions (Ex. I) Lw., Vol. 8, no. 8 August 1959

Uncl.

118. Estimation of free bases and high molecular weight organic acids in solid greases. S. Patzak. *Bull. Polish Inst. Petrol.*, 1954, 4, 12 (suppl. to *Zeszyt Techniczny*), 1954, 10. -- 3 methods were investigated: (1) grease is dissolved by warming with a mixture of light petroleum and 60% ethanol and titrated with alc KOH using phenolphthalein; (2) grease is dissolved in a mixture of light petroleum and saturated NaCl aqu. soln and then titrated as in (1); (3) grease is dissolved in the cold in light petroleum, and then 92% strong ethanol with a few drops of phenolphthalein is added. Excess of N/8-HCl is added to basic soln, which is then boiled to expel CO₂ and "back" titrated with alc KOH. Only the last method gives true free alkali even after prolonged exposure to atm, but all methods fail to give free acids in presence of their Pb, Al, or Zn salts.

M. S.

PATZAU, S.

PATZAU, S. Determining free bases and organic acids in grease. Biuletyn. p. 12.
Vol. 10, no. 12, Dec. 1954
MŁODY TECHNIK. Warszawa Poland

SOURCE: East European Accessions List (EEAL) LC Vol. 5, No. 6 June 1956

PATZANUS.

1840. Lubricants for roller bearings. S. Patzans. Bull.
Polish Acad. Phys., 1954, 4, 9 (suppl. to Acta Pol. (Krakow),
1954, 10). Such lubricants should have exceptionally low
visc and show no corros properties but have high adhesion
to metal. According to tests carried out, glycerine causes
the formation of long-chain fibrous soaps with Na or K.
Oleic acid gives fibrous structure whilst stearic does not.
High penetration is required, and here K soaps are better.
High bleeding temp adversely affects metal adhesion, but all
water must be expelled. These results are obtained by a
compromise.

M. H.

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CIA-RDP86-00513R001239510007-3"

Patzau, Stefan

Sulfide crust on copper. Lucian Czerak and Stefan Patzau (Acad. Gmach Muzeum Krakow, Poland) *Annales Polonici Historico* 2, 353-72 (1954). French summary, 370-1; cf. C.A. 48, 12579e. C. and P. verified the findings of previous investigators that sulfurization of Cu by boiling S leads to formation of a crust of an approx. composition $Cu_2S_{1.5}$. The thickness of the crust increases when Cu diffuses from the interior toward the surface where it reacts with S. At the same time S diffuses in the opposite direction. However, the diffusion of Cu is much faster, and hence only 10% of the diffused metal is replaced by sulfide. This is the reason the sulfide in the internal part (I) is in form of a porous agglomeration of fine grains, as distinguished from the external part (II) which is very compact. P. J.

Additional 1, 1.

Reference is made to the attached, "U.S. - Soviet Relations, Vol. 2, 1945-1950," pp. 100-101.

The entry is dated March 1, 1950, Vol. 1, p. 100, "U.S. - Soviet Relations, Vol. 2, 1945-1950," incl.

PAT-A 1

Journal of the Institute of Petroleum
Vol. 40 No. 362
Feb. 1954
Products

190. Estimation of heat of combustion of light petroleum products. S. Patzay. *Bull. Inst. Petrol.*, 1953, 3,

2. Experiment using bomb calorimeter on sample product sealed in a glass bulb shown drawbacks due to loss of volatile portions whilst sealing and occasional failure to break the glass bulb. Open vessels made of plastic produced low results due to incomplete combustion. Standard steel vessels catalyzed oxygen, and results were poor. To obtain more accurate results Zubov's method used in the U.S.S.R. was employed. Sample is put into stainless steel or Pt vessel covered over with collection of known vol. Very good results were obtained, and were up to 1% higher than without collection membrane. Since operations external to the bomb take approx 30 sec., losses due to evaporation are ruled out. It seems most likely that at the time when the bomb is filled with oxygen under pressure the hydrocarbon absorbs oxygen, and on ignition the heat of combustion is therefore lower. This seems to be borne out also by the excessively low figures if sample has been blown out of combustion vessel by surging oxygen. Exact measurements confirm Grapow's formulae (1) $Q_H = 12,400 - 2,100H$, (2) $Q_L = 2394 - 0.7195 Q_H$, using $L/H_2O = 56.3 : \text{cal/g}$, or (3a) $Q_L = 2551 + 0.7012 Q_H$, using $L/H_2O = 60.0 \text{ cal/g}$. M. S.

PATZAU, S.

Fuel Abstracts
June 1954
Analysis, Testing
Instruments

V 4905. ESTIMATION OF HEAT OF COMBUSTION OF LIGHT PETROLEUM PRODUCTS.
Patzau, S. (Bull. Polish Inst. Petrol., 1953, Vol. 5, 2). Experiment
using bomb calorimeter in which product was sealed in a glass bulb showed
drawbacks due to loss of volatile portions whilst sealing and occasional
failures to break the glass bulb. Open vessels made of quartz produced low
results due to incomplete combustion. Stainless steel vessels catalysed
oxidation, and results were good. To obtain more accurate results Zubov's
method used in the U.S.S.R. was employed. Sample is put into stainless
steel or platinum vessel covered over with collodion of known calorific value.
Very good results were obtained, and were up to 1% higher than without
collodion membrane. Since operations external to the bomb take approx.
30 sec, losses due to evaporation are ruled out. It seems most likely that
in the time when the bomb is filled with oxygen under pressure the hydrocarbon
absorbs oxygen, and on ignition the heat of combustion is therefore lower.
This seems to be borne out also by the excessively low figures if sample has
been blown out of combustion vessel by thrushing oxygen. Exact measurements
confirm Cragoe's formulae: (1) $Q_H = 12,400 - 2,100d^2$; (2) $Q_H = 2394 +$
 $0.7195 Q_H$, using $L \cdot lit. H_2O = 563.2 \text{ cal/g}$; or (2a) $Q_H = 2551 + 0.7012 Q_H$.
using $L \cdot lit. H_2O = 600 \text{ cal/g}$.

10-13-53 I.J.P.

PATZAUER, S.

KOTSIDIS, E.; PATZAUER, S.

"The graphic method of indirect quantitative chemical analysis." p. 125. (Magyar Kemikusok Lapja, Vol. 8, no. 4, Apr. 1953, Budapest)

SO: Monthly List of East European Accessions, Vol. 3, No. 2, Library of Congress,
Feb. 1954, Unclassified.